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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,440	08/14/2001	James Edward Sclater	41132	8133

7590 08/16/2004

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EXAMINER

JAMAL, ALEXANDER

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/928,440

Applicant(s)

SCLATER ET AL.

Examiner

Alexander Jamal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11142001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1,11,21, 9,19,29**, rejected under 35 U.S.C. 102(b) as being anticipated by Shaw (5251328).

As per **claim 1**, Shaw discloses a communications network with a first transceiver (first channel unit) and a second transceiver (second remote channel unit) that may transmit known training sequences to each other during a 'retraining' period (Col 3 lines 5-15). The units must inherently both be 'activated' and synchronized in order to successfully transmit, receive, and analyze training signals. Each channel unit will analyze the received training signal and then compensate for loop impairments by pre-distorting the transmitted signal so that both directions of communications are improved.

As per **claim 11**, claim rejected for the same reasons as the rejection of claim 1 as Shaw discloses a system to compensate for line impairments.

As per **claim 21**, claim rejected for the same reasons as the rejection of claim 1. The device described above would perform the method of claim 21.

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As per **claims 9,19,29**, Shaw discloses that the second channel unit is adapted to disconnect the customer equipment (information signal source 110 in Fig. 1) during a training sequence.

3. **Claims 31-34**, rejected under 35 U.S.C. 102(b) as being anticipated by D'Andrea et al (5867557).

As per **claims 31,32,33**, D'Andrea discloses a method of signaling the beginning of a test period to a remote channel unit (from a central office channel unit) comprising applying a signaling voltage to one of the tip or ring leads at a frequency (alternating pattern between voltage and ground) below the voice band (below 200Hz) (ABSTRACT, Col 6 lines 15-45).

As per **claim 34**, claim rejected for the same reasons as claim 31. The device responds to (senses) changes in voltage (current) on a telephone loop. It also draws current from the loop to charge a storage capacitor (ABSTRACT).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 2-8,12-18,22-28**, rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw (5251328) as applied to claims 1,11,21 above, and further in view of Cabot (5649304).

As per **claims 2,12,22**, Shaw Discloses applicant's claims 1,11,21 but does not specify that the training signal comprises a square wave at a frequency.

Cabot teaches a method of communicating a training signal across a telephone channel (Col 1 lines 10-20). He teaches that his training signal can be transmitted and analyzed quickly. Cabot's signal comprises a set of sinusoidal waves spaced apart at alternating generating block lengths (odd harmonics) (Col 5 lines 37-55, Col 10 lines 20-45). These set of equally spaced apart frequencies comprise a square wave (a square wave inherently-by definition- consists of a fundamental frequency and a set of odd harmonics), as per applicant's square wave training signal, when combined. It would have been obvious to one of ordinary skill in the art at the time of this application to implement Cabot's training signal for the advantage of providing a training sequence with minimal user downtime.

As per **claims 3,13,23**, Cabot discloses using an FFT analysis (Col 5 lines 60-67).

As per **claims 4,14,24**, claim rejected for the same reasons as rejections of claims 2,12,22.

As per **claims 5,6,15,16,25,26**, although Cabot does not specify a fundamental frequency of 1KHz, It would have been obvious to one of ordinary skill in the art at the time of this application to transmit and measure a frequency (with harmonics) chosen

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within the spectral band that is being used for the communication (such as between the voice band of a telephone line 200Hz-3Khz) (Col 5 lines 5-20).

As per **claims 7,8,17,18,27,28**, claim rejected for same reasons as the rejection of claim 2. The frequency spaced waveforms comprise the fundamental frequency and odd harmonics of a square wave.

6. **Claims 10,20,30** rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw (5251328) as applied to claims 1,9,11,19,21,29 above, and further in view of D'Andrea et al (5867557).

As per **claim 10,20,30**, Shaw discloses applicant's claims 1,9,11,19,21,29, but does not specify that the remote channel unit comprises an energy storage device that maintains a supply while the first channel units sends signaling power interrupts to the second unit.

D'Andrea discloses a diagnostic system comprising a second remote channel unit that comprises a storage capacitor and receives power interruption signaling from a CO channel unit to indicate the start of a test (ABSTRACT, Col 2 line 45 to Col 3 line 15, Col 4 lines 15-35). Shaw discloses that his system will send out the training signals during a 'retraining state' (Col 3 lines 5-15) but does not specify how the state is signaled to the channel units. D'Andrea teaches a reliable and effective way to signal from one unit to the other. It would have been obvious to one of ordinary skill in the art at the time of this application to implement this reliable method of signaling between the channel

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units to allow them to allow the second unit to effectively be signaled by a remote unit in a situation where the remote unit derives power from the central office unit (as in D'Andrea (Col 4 lines 15-35, Col 6 lines 15-42).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 703-305-3433. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 703-305-4708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9315 for After Final communications.

AJ
August 4, 2004


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
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